

Ser. No. 10/772,063
Response to Office Action of 05/18/2006

Attorney Docket: D0932-00447

Listing of Claims

1. (Currently amended) A building insulation comprising:
a cellulosic facing, comprising at least one antifungal/antimicrobial agent present in an amount in weight of between 12-24 ppm of the dry weight of the cellulosic facing; and
an insulation layer adhered to said cellulosic facing by an adhesive, said insulation layer comprising randomly oriented inorganic fibers bonded together with a binder, wherein said antifungal/antimicrobial agent is one or more compounds selected from the group consisting of: chlorine, organo-mercurials, chlorinated phenols, organo-bromides, organo-sulphur compounds, copper sulfate, 2, 4, 4'- trichloro-2' hydroxydiphenol, 5-chloro-2-(2, 4-dichlorophenoxy) phenol; diiodomethyl-p-tolylsulfone; 2-bromo-2 nitropropane-1, 3-diol (BNPD); sodium 2-pyridinethiol-1-oxide (PEO); 3-iodo-2 propynyl-butyl carbamate; phenyl-(2-cyano-2 chlorovinyl) sulfone; N, N-dimethyl-N'-phenyl-(N'-fluorodichloromethylthio) sulfamide; 2, 2-dibromo-2-nitrilopropionamide; 3,4-dichloro-1, 2-dithiol-3-one; N-4-dihydroxy-alpha-oxobenzene-ethanimidoyl chloride; methylene-bis-thiocyanate; dodecylguanidine hydrochloride; sodium 2-pyridinethiol-1-oxide; trihaloalkyl sulfone; bis (trichloro methyl) sulfone (BTCMS), chlorhexidine; polyhexamethylene biguanide (PHMB), glutaraldehyde, and derivations, homologues and combinations thereof.

2. (Original) The building insulation of claim 1 wherein said antifungal/antimicrobial agent is nontoxic and noncarcinogenic when said facing is contacted by humans.

3. (Original) The building insulation of claim 1 wherein said antifungal/antimicrobial agent is heat resistant to a temperature of at least about 250°F.

4. (Previously presented) The building insulation of claim 1 wherein said antifungal/antimicrobial agent is heat resistant when contacted with molten bituminous adhesive;
and

said insulation layer is bonded to said cellulosic facing with a bituminous

adhesive.
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5. (Original) The building insulation of claim 1, wherein the cellulosic facing is Kraft paper.
6. (Original) The building insulation of claim 1, wherein said cellulosic facing has a basis weight of about 20-60 lbs. per 3000 ft².
7. (Canceled)
8. (Original) The building insulation of claim 1, wherein said insulation has a R-value of between 5 and 100.
9. (Original) The building insulation of claim 1, wherein said insulation passes ASTM C1338 when exposed to a microorganism.
10. (Original) The building insulation of claim 1, wherein said antifungal/antimicrobial agent presents no significant toxic residue on said cellulosic facing.
11. (Canceled)
12. (Canceled)
13. (Original) The building insulation of claim 4 wherein said antifungal/antimicrobial agent is added to the furnish pulp used to make said cellulosic facing.
14. (Currently amended) A building insulation comprising a cellulosic facing, comprising at least one antifungal/antimicrobial agent added to the furnish pulp used to make said cellulosic facing in a quantity of between 12-24 ppm of the dry weight of the cellulosic facing, but high enough to render said facing mold resistant in accordance with ASTM C1338; and
an insulation layer adhered to said cellulosic facing by an adhesive, said insulation layer comprising randomly oriented inorganic fibers bonded together with a binder, wherein said antifungal/antimicrobial agent is one or more compounds selected from the group consisting of: chlorine, organo-mercurials, chlorinated phenols, organo-bromides, organo-sulphur compounds.

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copper sulfate, 2, 4, 4'- trichloro-2' hydroxydiphenol, 5-chloro-2-(2, 4-dichlorophenoxy) phenol; diiodomethyl-p-tolylsulfone; 2-bromo-2 nitropropane-1, 3-diol (BNPD); sodium 2-pyridinethiol-1-oxide (PEO); 3-iodo-2 propynyl-butyl carbamate; phenyl-(2-cyano-2 chlorovinyl) sulfone; N, N-dimethyl-N'-phenyl-(N'-fluorodichloromethylthio) sulfamide; 2, 2-dibromo-2-nitrilopropionamide; 3,4-dichloro-1, 2-dithiol-3-one; N-4-dihydroxy-alpha-oxobenzene-ethanimidoyl chloride; methylene-bis-thiocyanate; dodecylguanidine hydrochloride; sodium 2-pyridinethiol-1-oxide; trihaloalkyl sulfone; bis (trichloro methyl) sulfone (BTCMS), chlorhexidine; polyhexamethylene biguanide (PHMB), glutaraldehyde, and derivations, homologues and combinations thereof.

15. (Original) The building insulation of claim 14, wherein said cellulosic facing is Kraft paper having a basis weight of about 20-60 lbs. per 3000 ft.².

16. (Original) The building insulation of claim 15, wherein said Kraft paper has a bituminous vapor barrier coating thereon.

17. (Previously presented) The building insulation of claim 16, wherein said antifungal/antimicrobial agent is resistant to a temperature of at least about 250°F.

18. - 37. (Canceled)

38. (Currently amended) A building insulation batt comprising:
a cellulosic facing comprising at least one antifungal/antimicrobial agent present in an amount in weight of between 12-24 ppm of the dry weight of the cellulosic facing, wherein the antifungal/antimicrobial agent is nontoxic and noncarcinogenic when contacting the skin of a human being and is one or more compounds selected from the group consisting of: chlorine, organo-mercurials, chlorinated phenols, organo-bromides, organo-sulphur compounds, copper sulfate, 2, 4, 4'- trichloro-2' hydroxydiphenol, 5-chloro-2-(2, 4-dichlorophenoxy) phenol; diiodomethyl-p-tolylsulfone; 2-bromo-2 nitropropane-1, 3-diol (BNPD); sodium 2-pyridinethiol-1-oxide (PEO); 3-iodo-2 propynyl-butyl carbamate; phenyl-(2-cyano-2 chlorovinyl) sulfone; N, N-dimethyl-N'-phenyl-(N'-fluorodichloromethylthio) sulfamide; 2, 2-dibromo-2-

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nitrilopropionamide; 3,4-dichloro-1, 2-dithiol-3-one; N-4-dihydroxy-alpha-oxobenzene-ethanimidoyl chloride; methylene-bis-thiocyanate; dodecylguanidine hydrochloride; sodium 2-pyridinethiol-1-oxide; trihaloalkyl sulfone; bis (trichloro methyl) sulfone (BTCMS), chlorhexidine; polyhexamethylene biguanide (PHMB), glutaraldehyde, and derivations, homologues and combinations thereof; and

an insulation layer adhered to said cellulosic facing by an adhesive, said insulation layer comprising randomly oriented inorganic fibers bonded together with a binder.

39. (Currently amended) A building insulation comprising:

a cellulosic facing comprising at least one antifungal/antimicrobial agent present in an amount in weight of between 12-24 ppm of the dry weight of the cellulosic facing, which is heat resistant to a temperature of at least about 250° F; and

an insulation layer bonded to said cellulosic facing with an adhesive, said insulation layer comprising randomly oriented inorganic fibers bonded together with a binder, wherein said antifungal/antimicrobial agent is one or more compounds selected from the group consisting of: chlorine, organo-mercurials, chlorinated phenols, organo-bromides, organo-sulphur compounds, copper sulfate, 2, 4, 4'- trichloro-2' hydroxydiphenol, 5-chloro-2-(2, 4-dichlorophenoxy) phenol; diiodomethyl-p-tolylsulfone; 2-bromo-2 nitropropane-1, 3-diol (BNPD); sodium 2-pyridinethiol-1-oxide (PEO); 3-iodo-2 propynyl-butyl carbamate; phenyl-(2-cyano-2 chlorovinyl) sulfone; N, N-dimethyl-N'-phenyl-(N'-fluorodichloromethylthio) sulfamide; 2, 2-dibromo-2-nitrilopropionamide; 3,4-dichloro-1, 2-dithiol-3-one; N-4-dihydroxy-alpha-oxobenzene-ethanimidoyl chloride; methylene-bis-thiocyanate; dodecylguanidine hydrochloride; sodium 2-pyridinethiol-1-oxide; trihaloalkyl sulfone; bis (trichloro methyl) sulfone (BTCMS), chlorhexidine; polyhexamethylene biguanide (PHMB), glutaraldehyde, and derivations, homologues and combinations thereof.

40. (Currently amended) A building insulation comprising:

a cellulosic facing comprising at least one antifungal/antimicrobial agent present in an amount in weight of between 12-24 ppm of the dry weight of the cellulosic facing, which is heat resistant when contacted with molten bituminous adhesive; and

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an insulation layer bonded to said cellulosic facing with a bituminous adhesive, said insulation layer comprising randomly oriented inorganic fibers bonded together with a binder, wherein said antifungal/antimicrobial agent is one or more compounds selected from the group consisting of: chlorine, organo-mercurials, chlorinated phenols, organo-bromides, organo-sulphur compounds, copper sulfate, 2, 4, 4'- trichloro-2' hydroxydiphenol, 5-chloro-2-(2, 4-dichlorophenoxy) phenol; diiodomethyl-p-tolylsulfone; 2-bromo-2 nitropropane-1, 3-diol (BNPD); sodium 2-pyridinethiol-1-oxide (PEO); 3-iodo-2 propynyl-butyl carbamate; phenyl-(2-cyano-2 chlorovinyl) sulfone; N, N-dimethyl-N'-phenyl-(N'-fluorodichloromethylthio) sulfamide; 2, 2-dibromo-2-nitrilopropionamide; 3,4-dichloro-1, 2-dithiol-3-one; N-4-dihydroxy-alpha-oxobenzene-ethanimidoyl chloride; methylene-bis-thiocyanate; dodecylguanidine hydrochloride; sodium 2-pyridinethiol-1-oxide; trihaloalkyl sulfone; bis (trichloro methyl) sulfone (BTCMS), chlorhexidine; polyhexamethylene biguanide (PHMB), glutaraldehyde, and derivations, homologues and combinations thereof.

41. (Currently amended) A facing for an insulation product, comprising a Kraft paper having adhered to a first surface thereof by a bituminous adhesive, said Kraft paper containing a ~~bicide~~ an antifungal/antimicrobial agent in the amount in weight of between 12-24 ppm of the dry weight of the cellulosic facing, which is effective in achieving no observable fungi or mildew growth when tested in accordance with the ASTM C-1338 test method, wherein said antifungal/antimicrobial agent is one or more compounds selected from the group consisting of: chlorine, organo-mercurials, chlorinated phenols, organo-bromides, organo-sulphur compounds, copper sulfate, 2, 4, 4'- trichloro-2' hydroxydiphenol, 5-chloro-2-(2, 4-dichlorophenoxy) phenol; diiodomethyl-p-tolylsulfone; 2-bromo-2 nitropropane-1, 3-diol (BNPD); sodium 2-pyridinethiol-1-oxide (PEO); 3-iodo-2 propynyl-butyl carbamate; phenyl-(2-cyano-2 chlorovinyl) sulfone; N, N-dimethyl-N'-phenyl-(N'-fluorodichloromethylthio) sulfamide; 2, 2-dibromo-2-nitrilopropionamide; 3,4-dichloro-1, 2-dithiol-3-one; N-4-dihydroxy-alpha-oxobenzene-ethanimidoyl chloride; methylene-bis-thiocyanate; dodecylguanidine hydrochloride; sodium 2-pyridinethiol-1-oxide; trihaloalkyl sulfone; bis (trichloro methyl) sulfone (BTCMS), chlorhexidine; polyhexamethylene biguanide (PHMB), glutaraldehyde, and derivations, homologues and combinations thereof.

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42. (New) A building insulation comprising:
a cellulosic facing, comprising at least one antifungal/antimicrobial agent present in an amount in weight of between 12-24 ppm of the dry weight of the cellulosic facing; and
an insulation layer adhered to said cellulosic facing by an adhesive, said insulation layer comprising randomly oriented inorganic fibers bonded together with a binder, wherein said antifungal/antimicrobial agent consists of a mixture of methylene-bis-thiocyanate and dodecylguanidine hydrochloride as active ingredients.
43. (New) The building insulation of claim 42 wherein said antifungal/antimicrobial agent is heat resistant to a temperature of at least about 250°F.
44. (New) The building insulation of claim 42 wherein said insulation layer is bonded to said cellulosic facing with a bituminous adhesive.
45. (New) The building insulation of claim 42, wherein the cellulosic facing is Kraft paper.
46. (New) The building insulation of claim 42, wherein said cellulosic facing has a basis weight of about 20-60 lbs. per 3000 ft².
47. (New) The building insulation of claim 42, wherein said insulation has a R-value of between 5 and 100.
48. (New) The building insulation of claim 42, wherein said insulation passes ASTM C1338 when exposed to a microorganism.
49. (New) The building insulation of claim 42, wherein said antifungal/antimicrobial agent presents no significant toxic residue on said cellulosic facing.
50. (New) The building insulation of claim 45 wherein said antifungal/antimicrobial agent is added to the furnish pulp used to make said cellulosic facing.